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NAVAL ENERGY FORUM

“Creating Spartan Energy Warriors: Our Competitive Advantage”

Washington, DC

13 – 14 October 2011

Agenda

Thursday, October 13, 2011

WHY THIS TIME IS DIFFERENT

- RADM Philip Cullom, Director, Energy and Environmental Readiness Division (OPNAV N45), Director, Navy Task Force Energy Part 1, Part 2

REACHING OUR ENLISTED SAILORS

- Master Chief Petty Officer of the Navy Rick D. West

NEW ENERGY FUTURE

A GLOBAL VIEW TO ENERGY’S FUTURE

- Mr. Vinod Khosla, Khosla Ventures

INTERAGENCY SYNERGIES — DoN & SBA

- Ms. Karen Mills, Administrator, Small Business Administration

RETOOLING OUR FLEET: SUCCESSES AND CHALLENGES

MARITIME INITIATIVES/SUCCESSES

- RDML Ann Phillips, Director, Surface Warfare Division (OPNAV N86)

EXPEDITIONARY INITIATIVES/SUCCESSES — INDIA 3/5 OVERVIEW

- Maj. Sean Sadlier, USMC, U.S. Marine Corps Expeditionary Energy Office

COMBAT ENABLERS — IT’S ABOUT THE WARFIGHTER

U.S. MARINE CORPS INITIATIVES/SUCCESSES

- Col. Bob Charette, USMC, Director, U.S. Marine Corps Expeditionary Energy Office

SHORE INITIATIVES/SUCCESSES

- RADM William French, Commander, Navy Region Southwest

Friday, October 14, 2011

PANEL: INFORMATION SYSTEMS EFFICIENCY

N2/6 PERSPECTIVE

- RDML Matt Klunder, Director of Intelligence, Surveillance and Reconnaissance Capabilities Division (OPNAV N2/N6F2)

SHIPBOARD SYSTEMS

- Dr. Timothy McCoy, Director, Electric Ships Office

A TOTAL OWNERSHIP COST VIEW OF ACQUISITION

- Ms. Jo Decker, Assistant Deputy Chief of Naval Operations for Fleet Readiness and Logistics

CAPABILITIES AND RESOURCES

- VADM John Terence Blake, Deputy Chief of Naval Operations, Integration of Capabilities and Resources (OPNAV N8)

OUR PAST IS PROLOGUE

- Mr. James Hornfischer, New York Times Bestselling Author

THE FUTURE OF POWER AND ENERGY

- Dr. Richard Carlin, Head, Sea Warfare and Weapons Department, Office of Naval Research

PANEL: EXTERNAL PERSPECTIVES ON ENERGY INNOVATION

- BG Bob Barnes, USA (Ret), Senior Policy Advisor, The Nature Conservancy
- Mr. Paul Bollinger, General Manager of Government Solutions, Boeing Energy

INTERAGENCY/INDUSTRY COOPERATION

- Dr. Arun Majumdar, Director, Advanced Research Projects Agency - Energy (ARPA-E)





NAVAL ENERGY FORUM

**Creating Spartan Energy Warriors:
Our Competitive Advantage**

FORUM HIGHLIGHTS:

- ▶ Keynote Addresses by Secretary of the Navy Ray Mabus, Chief of Naval Operations Admiral Jonathan Greenert, Admiral John C. Harvey, and other Distinguished Guests
- ▶ Presentations on importance of culture change, successes/challenges for our fleet and shore infrastructure, investments in alternative fuels, information systems, energy efficient acquisition, and game changing solutions
- ▶ Special remarks by Mr. Jim Hornfischer, *New York Times* bestselling author



OCTOBER 13-14, 2011

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A WELCOME MESSAGE



Welcome to the 2011 Naval Energy Forum. Since I announced the Navy's energy goals at this forum two years ago, we have made remarkable progress in our efforts to achieve greater energy security for the Navy and the nation. I am committed to positioning our Naval forces for tomorrow's challenges, and changing the way the Department of the Navy uses, produces, and acquires energy is one of our greatest challenges because it is also one of our greatest vulnerabilities.

Our investments in more efficient and alternative sources of energy will directly affect our combat capability. For example, we import more fuel into Afghanistan than any other supply. For every fifty fuel convoys in Afghanistan, a Marine is killed or wounded while protecting the supply route. Improved efficiency means fewer trucks on the road, and fewer Sailors and Marines in that vulnerable position. Likewise, shipboard energy efficiency means more time performing missions and less time spent refueling in potentially dangerous ports, or at sea. Our naval vessels are most at risk during refueling, as the USS Cole was when it was attacked in 2000 in the Yemeni port of Aden.

Energy efficiency can also affect combat capability by saving money. The Department of Defense is struggling to find ways to save money while maintaining the strongest military in the world. We can protect our readiness capabilities and our operations from budget cuts if we can reduce our energy costs, and reducing our dependence on foreign oil will result in savings. Political unrest in oil-rich nations often results in fuel price spikes, which cost the Navy millions of dollars. The Navy's fuel costs jump \$30 million for every \$1 increase in a barrel of oil, and price fluctuations over the last two years resulted in \$1.1 billion in budgeting uncertainty for the Navy. So much uncertainty is particularly problematic in today's budget climate. We must have the resources required to maintain, train, and equip combat-ready naval forces capable of winning

wars, deterring aggression, and maintaining freedom of the seas. That is why avoiding these fuel price spikes and elevations is essential to the Navy's core mission, and why developing alternative fuels is a priority. We have already seen a return on our investments in more efficient energy use. Last year, we launched the first hybrid ship in the Navy, the USS Makin Island. In its maiden voyage, the Makin Island saved almost \$2 million in fuel costs. Over the lifetime of the ship, we can save \$250 million at last year's fuel prices.

We also continue to make progress in our efforts to test and certify all of our aircraft and ships on drop-in biofuels. At this year's NAS Patuxent River Labor Day Air Show, all six of the Navy's Blue Angels performed using a 50/50 blend of camelina-based biofuel and aviation gas. The F/A-18 Hornet flew at 1.7 times the speed of sound on this 50/50 blend with no difference in the performance of the aircraft. We have successfully tested the MH-60 Seahawk, the RCB-X (Riverine Command Boat), V-22 Osprey, EA-6B Prowler, T-45 trainer and AV-8 Harrier. We will complete testing on all of our aircraft by the fall of 2011, and will have certified all of our ships and planes by the end of next year. Energy efficiency measures we are pursuing on our shore installations will also realize additional cost savings. We have done a lot. But we have more to do.

Advances in energy efficiency and alternative energy will go a long way toward achieving the ambitious energy goals that I announced at this forum in 2009, but the full value of these initiatives will not be achieved without changing the way we as a Navy and a nation look at energy. During this Forum, I encourage you to share your expertise, challenge old assumptions, and think creatively about how all of us can work together to secure our future as a nation and as a Navy. The military can, and should, continue to lead the way. For 235 years, the United States Navy and the United States Marine Corps have been innovators in energy. The Navy does not pursue energy innovation because it is a fad or a popular catch phrase. We do it because it makes us better war fighters.

Secretary of the Navy Ray Mabus



THURSDAY, OCTOBER 13, 2011

- 7:00am - 7:55am Registration Open - Atrium Ballroom Foyer Ground Level
Continental Breakfast Available in Atrium Ballroom Foyer Concourse Level
- 7:55am - 8:00am **WELCOME — COLORS** - Atrium Ballroom
- 8:00am - 8:05am **WHY THIS TIME IS DIFFERENT**
► RADM Philip Cullom, *Director, Energy and Environmental Readiness Division (OPNAV N45), Director, Navy Task Force Energy*
- 8:05am - 8:10am **INTRODUCTION OF CHIEF OF NAVAL OPERATIONS**
► VADM William R. Burke, *Deputy Chief of Naval Operations for Fleet Readiness and Logistics (OPNAV N4)*
- 8:10am - 8:40am **OPENING KEYNOTE**
► ADM Jonathan W. Greenert, *Chief of Naval Operations*
- EFFECTING CULTURE CHANGE — HOW TO CREATE SPARTAN ENERGY WARRIORS**
- 8:40am - 9:05am **FLEET PERSPECTIVE**
► ADM John C. Harvey, Jr., *Commander, U.S. Fleet Forces Command*
- 9:05am - 9:15am **REACHING OUR ENLISTED SAILORS**
► Master Chief Petty Officer of the Navy Rick D. West
- NEW ENERGY FUTURE**
- 9:15am - 10:00am **A GLOBAL VIEW TO ENERGY'S FUTURE**
► Mr. Vinod Khosla, *Khosla Ventures*
- 10:00am - 10:15am **BREAK - VISIT DISPLAYS IN ATRIUM**
Refreshments Available in Atrium Ballroom Foyer Concourse Level
- 10:15am - 10:30am **INTERAGENCY SYNERGIES — DoN & SBA**
► Ms. Karen Mills, *Administrator, Small Business Administration*
- 10:30am - 11:00am **KEYNOTE ADDRESS**
► Honorable Ray Mabus, *Secretary of the Navy*
- RETOOLING OUR FLEET: SUCCESSSES AND CHALLENGES**
- 11:00am - 11:30am **MARITIME INITIATIVES/SUCCESSSES**
► RDML Ann Phillips, *Director, Surface Warfare Division (OPNAV N86)*
- 11:30am - 12:00pm **AVIATION INITIATIVES/SUCCESSSES**
► VADM David Architzel, *Commander, Naval Air Systems Command*
- 12:00pm - 1:15pm **LUNCH IN THE ATRIUM - VISIT DISPLAYS**
- 1:15pm - 1:45pm **EXPEDITIONARY INITIATIVES/SUCCESSSES — INDIA 3/5 OVERVIEW**
► Maj. Sean Sadlier, USMC, *U.S. Marine Corps Expeditionary Energy Office*
- COMBAT ENABLERS — IT'S ABOUT THE WARFIGHTER**
- 1:45pm - 2:20pm **U.S. MARINE CORPS INITIATIVES/SUCCESSSES**
► Col. Bob Charette, USMC, *Director, U.S. Marine Corps Expeditionary Energy Office*

2:20pm - 2:50pm

SHORE INITIATIVES/SUCCESSSES

- RADM William French, *Commander, Navy Region Southwest*

2:50pm - 3:05pm

BREAK - VISIT DISPLAYS IN ATRIUM

Refreshments Available in Atrium Ballroom Foyer Concourse Level

3:05pm - 3:40pm

PANEL: INVESTMENT IN ALTERNATIVE FUELS

- ▶ Mr. Tom Hicks, *Deputy Assistant Secretary of the Navy (Energy)*
- ▶ Dr. Henry Kelly, *Acting Assistant Secretary and Principal Deputy Assistant Secretary for the Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy*
- ▶ Ms. Sarah Bittleman, *Senior Advisor to USDA Secretary Tom Vilsack*

3:40pm - 3:50pm

DISCUSSION (Q&A)

VIEW FROM THE HILL

3:50pm - 4:45pm

REMARKS

- ▶ Former Senator John Warner (R-VA)
- ▶ Pending

4:45pm - 6:00pm

RECEPTION IN THE ATRIUM - VISIT DISPLAYS

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FRIDAY, OCTOBER 14, 2011

- 7:00am - 8:00am Registration Open - Atrium Ballroom Foyer, Ground Level
Continental Breakfast Available in Atrium Ballroom Foyer, Concourse Level
- 8:00am - 8:15am **OVERVIEW: DAY TWO**
▶ RADM Philip Cullom, *Director, Energy and Environmental Readiness Division (OPNAV N45), Director, Navy Task Force Energy*
- 8:15am - 8:40am **OPERATIONAL ENERGY — THE DoD PERSPECTIVE**
▶ Honorable Sharon Burke, *Assistant Secretary of Defense for Operational Energy Plans & Programs*
- PANEL: INFORMATION SYSTEMS EFFICIENCY**
- 8:40am - 9:05am **N2/6 PERSPECTIVE**
▶ RDML Matt Klunder, *Director of Intelligence, Surveillance and Reconnaissance Capabilities Division (OPNAV N2/N6F2)*
- 9:05am - 9:25am **SHIPBOARD SYSTEMS**
▶ Dr. Timothy McCoy, *Director, Electric Ships Office*
- 9:25am - 9:35am **DISCUSSION (Q&A)**
- 9:35am - 9:45am **BREAK - VISIT DISPLAYS IN ATRIUM**
Refreshments Available in Atrium Ballroom Foyer Concourse Level
- ENERGY EFFICIENT ACQUISITION**
- 9:45am - 10:20am **PANEL: A CONGRESSIONAL STAFF PERSPECTIVE**
▶ Mr. John H. Quirk V, *Professional Staff Member, Senate Armed Services Committee*
▶ Jamie R. Lynch, *Professional Staff Member, House Armed Services Committee*
▶ Dr. Gavi Begtrup, *Policy Advisor to Rep. Gabrielle Giffords (D-AZ)*
- 10:20am - 10:40am **ENERGY AND ACQUISITION REFORM**
▶ Mr. Jim Thomsen, *Principal Civilian Deputy Assistant Secretary of the Navy (Research, Development & Acquisition)*
- 10:40am - 11:00am **A TOTAL OWNERSHIP COST VIEW OF ACQUISITION**
▶ Ms. Jo Decker, *Assistant Deputy Chief of Naval Operations for Fleet Readiness and Logistics*
- 11:00am - 11:20am **CAPABILITIES AND RESOURCES**
▶ VADM John Terence Blake, *Deputy Chief of Naval Operations, Integration of Capabilities and Resources (OPNAV N8)*
- 11:20am - 12:00pm **OUR PAST IS PROLOGUE**
▶ Mr. James Hornfischer, *New York Times Bestselling Author Book Signing to Follow*
- 12:00pm - 1:00pm **LUNCH IN THE ATRIUM - VISIT DISPLAYS**
- GAME CHANGING SOLUTIONS**
- 1:00pm - 1:10pm **REMARKS BY U.S. SECRETARY OF AGRICULTURE**
▶ Honorable Tom Vilsack, *Secretary of Agriculture*

1:10pm - 1:40pm

THE FUTURE OF POWER AND ENERGY

- Dr. Richard Carlin, *Head, Sea Warfare and Weapons Department, Office of Naval Research*

1:40pm - 2:30pm

PANEL: EXTERNAL PERSPECTIVES ON ENERGY INNOVATION

- ▶ BG Bob Barnes, USA (Ret), *Senior Policy Advisor, The Nature Conservancy*
- ▶ Mr. Paul Bollinger, *General Manager of Government Solutions, Boeing Energy*
- ▶ Mr. Amory Lovins, *Cofounder, Chairman and Chief Scientist, Rocky Mountain Institute*

2:30pm - 3:00pm

INTERAGENCY/INDUSTRY COOPERATION

- Dr. Arun Majumdar, *Director, Advanced Research Projects Agency - Energy (ARPA-E)*

3:00pm - 3:15pm

CLOSING REMARKS

- RADM Philip Cullom, *Director, Energy and Environmental Readiness Division (OPNAV N45), Director, Navy Task Force Energy*

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HONORABLE RAY MABUS *SECRETARY OF THE NAVY*



Ray Mabus is the 75th United States Secretary of the Navy. As Secretary, he leads America's Navy and Marine Corps and is responsible for an annual budget in excess of \$150 billion and almost 900,000 people. Prior to joining the administration of President Barack Obama, Mabus served in a variety of top posts in government and the private sector. In 1988, Mabus was elected Governor of Mississippi. As the youngest governor of Mississippi in more than 100 years at the time of his election, he stressed education and job creation. He passed B.E.S.T. (Better Education for Success Tomorrow), one of the most comprehensive education reform programs in America, and was named one of Fortune Magazine's top ten education governors. He was appointed Ambassador to the Kingdom of Saudi Arabia for the Clinton Administration in 1994. Prior to becoming Governor he was elected State Auditor of Mississippi and served as a Surface Warfare Officer in the U.S. Navy aboard the cruiser USS Little Rock. Secretary Mabus is a native of Ackerman, Miss., and received a Bachelor's Degree from the University of Mississippi, a Master's Degree from Johns Hopkins University, and a Law Degree from Harvard Law School.

ADM JONATHAN W. GREENERT *CHIEF OF NAVAL OPERATIONS*



Adm. Jonathan W. Greenert is a native of Butler, Pa. He graduated from the U.S. Naval Academy in 1975 and completed studies in nuclear power for service as a submarine officer. His career as a submariner includes assignments aboard USS Flying Fish (SSN 673), USS Tautog (SSN 639), Submarine NR-1 and USS Michigan (SSBN 727 - Gold Crew), culminating in command of USS Honolulu (SSN 718) from March 1991 to July 1993. Subsequent fleet command assignments include Commander, Submarine Squadron 11; Commander, U.S. Naval Forces Marianas; Commander, U.S. 7th Fleet (August 2004 to September 2006); and, Commander, U.S. Fleet Forces Command (September 2007 to July 2009). Greenert has served in various fleet support and financial management positions, including deputy chief of Naval Operations for Integration of Capabilities and Resources (N8); deputy commander, U.S. Pacific Fleet; chief of staff, U.S. 7th Fleet; head, Navy Programming Branch and director, Operations Division Navy Comptroller. Most recently he served as 36th vice chief of naval operations (August 2009 to August 2011). He is a recipient of various personal and campaign awards including the Distinguished Service Medal (6 awards), Defense Superior Service Medal and Legion of Merit (4 awards). In 1992 he was awarded the Vice Admiral Stockdale Award for inspirational leadership. He considers those awards earned throughout his career associated with unit performance to be most satisfying and representative of naval service. Greenert became the 30th Chief of Naval Operations Sep. 23, 2011.

VADM DAVID ARCHITZEL *COMMANDER, NAVAL AIR SYSTEMS COMMAND*



Vice Admiral Architzel assumed his current duties in May 2010, after serving as the principal military deputy to the assistant secretary of the Navy (Research, Development, and Acquisition). Previous flag assignments included program executive officer for Aircraft Carriers; commander of Operational Test and Evaluation Force, Norfolk; commander, Navy Region Mid-Atlantic; commander, Naval Safety Center, Norfolk; commander, Iceland Defense Force; and commander, Fleet Air Keflavik. At sea, Architzel served as the executive officer, USS Dwight D. Eisenhower (CVN 69) and Pre-Commissioning Unit John C. Stennis (CVN 74). He served as the commanding officer, USS Guam (LPH 9); flagship for commander Amphibious Squadron (CPR) 2; and the sixth commanding officer of USS Theodore Roosevelt (CVN 71). A career naval aviator, Architzel has accumulated more than 5,000 flight hours, 4,300 of those hours in the S-3, and the remainder in some 30 other aircraft types in his role as a test pilot at NAS Patuxent River. He served in Sea Control Squadron (VS) 30, deploying aboard USS Forrestal (CV 59), and as maintenance officer in VS-28, deploying aboard USS Independence (CV 62). He later returned to VS-30 as the executive officer and subsequently as commanding officer.

BG BOB BARNES (USA), RET
SENIOR POLICY ADVISOR, THE NATURE CONSERVANCY

BG (ret) Bob Barnes serves as The Nature Conservancy's Senior Policy Advisor (Department of Defense) and is a member of The Conservancy's energy and climate change teams. Bob's duties include coordinating all relationships between The Conservancy and DoD with special emphasis on cooperative programs that facilitate military readiness and also advance The Conservancy's natural resource conservation and sustainability objectives. Bob retired from the Army in 2001 after 32 years of service. His final assignment was as the Assistant Judge Advocate General for Civil Law and Litigation, where his responsibilities included supervising the Army's Environmental Law Division and the defense of the Army in all civil (including environmental) litigation. Key earlier assignments included serving as the senior attorney for Forces Command, the Army's largest command, and as Deputy Legal and Legislative Counsel to the Chairman of the Joint Chiefs of Staff during Operations Just Cause (Panama) and Desert Shield/Storm (Gulf War).



DR. GAVI BEGRUP
POLICY ADVISOR TO REP. GABRIELLE GIFFORDS (D-AZ)

Gavi Begtrup is the Policy Advisor for Congresswoman Gabrielle Giffords of Arizona. He advises the Ranking Member of the House Space and Aeronautics Subcommittee on a variety of issues, including science and technology, energy and environment, and space. In that role he spearheads the Congresswoman's efforts on renewable energy, especially solar, and defense energy issues, culminating in the Department of Defense Energy Security Acts of 2010 and 2011 (DODESA). Dr. Begtrup has a background in physics and made his way to Congress through a AAAS Congressional Science fellowship. Prior to working on "the Hill," he was a Mirzayan Science and Technology Policy Graduate Fellow at the National Academies of Science, where he worked on breakthrough science projects, and has worked as a policy analyst at the ASysT Institute at Analytic Services Inc., a homeland security non-profit. Dr. Begtrup is a native of Nashville, TN and the son of veterans. He earned his B.S. in Physics and Mathematics from Western Kentucky University and his Ph.D. in Physics from the University of California, Berkeley.



MS. SARAH BITTLEMAN
SENIOR ADVISOR TO USDA SECRETARY TOM VILSACK

Sarah Bittleman is a Senior Advisor to USDA Secretary Tom Vilsack specializing in energy, Environmental Protection Agency issues, Title I programs and other areas related to production agriculture. Bittleman previously worked for the Department of the Interior, the U.S. Senate and the House of Representatives on a range of policy and strategic development issues involving agriculture, energy, natural resources and climate change. She holds a Master of Public Administration from East Carolina University, a Juris Doctorate from Tulane University of Law School and a BA in Political Science from Union College in New York.



VADM JOHN TERENCE BLAKE

DEPUTY CHIEF OF NAVAL OPERATIONS, INTEGRATION OF CAPABILITIES AND RESOURCES



Vice Admiral Blake graduated from the U.S. Naval Academy in 1975. His sea duty assignments include: USS New (DD 818), USS Sarfield (DD 837), USS Joseph Strauss (DDG 16), USS John Young (DD 973), USS Chandler (DDG 996), USS Leahy (CG 16), and USS Blue Ridge (LCC 11). Blake commanded USS O'Brien (DD 975), served on the 7th Fleet Staff as current operations and assistant chief of staff for Operations, Commanded USS Normandy (CG 60) and served as Commander, Carrier Strike Group Eleven. His shore assignments include: Flag Aide to Commander, Navy Recruiting Command; Navy Staff (N80) Head, Sea Control Section and program manager for the Navy Shipbuilding account; (J8) division chief and head of the Combat Identification Joint Warfare Capability Assessment Team; director, Programming Division (N80); director, Operations Division, Office of Budget in the Office of the Assistant Secretary of the Navy (Financial Management/Comptroller); director, Operations Division, Fiscal Management Division, OPNAV; deputy director for Resources and Acquisition (J8) and Deputy Assistant Secretary of the Navy for Budget.

MR. PAUL BOLLINGER

GENERAL MANAGER OF GOVERNMENT SOLUTIONS, BOEING ENERGY



Paul Bollinger became general manager of Government Solutions for Boeing Energy in August 2010. Boeing Energy is a division of Global Services & Support within Boeing Defense, Space & Security (BDS). Bollinger is responsible for Boeing Energy's development of energy programs and services for federal, state and municipal government agencies, as well as other public entities. Before joining Boeing, Bollinger served in several significant government service positions, beginning as special assistant to the Assistant Secretary for Installations, Environment & Logistics for the U.S. Air Force. In this role he had primary responsibility in the Pentagon for ensuring the success of the Air Force Synthetic Fuel Certification program. He also established the Alternative Fuels Certification Office at Wright-Patterson Air Force Base. Bollinger later served as Deputy Assistant Secretary for Energy and Partnerships for the U.S. Army. In this role, he was the Senior Energy Executive responsible for the execution of the Army's Energy Security Implementation Strategy. He also oversaw the \$13 billion Residential Community Initiative that worked with the private sector to build and maintain 89,000 housing units for soldiers and their families.

VADM WILLIAM R. BURKE

DEPUTY CHIEF OF NAVAL OPERATIONS FOR FLEET READINESS AND LOGISTICS (OPNAV N4)



Vice Admiral Burke graduated from the United States Naval Academy in 1978 with a Bachelor of Science in Systems Engineering. In 1985, he completed an MBA at Marymount University. In 1999, he earned an MS in National Security Strategy at the National War College in Washington, D.C. His submarine assignments include USS Lafayette (SSBN 616), USS Key West (SSN 722), USS Omaha (SSN 692), USS Cavalla (SSN 684), and command of USS Toledo (SSN 769). He commanded Submarine Squadron 2 from July 2001 to July 2003. His Washington D.C. shore assignments include a tour in chief of naval operations' Attack Submarine Division, assistant deputy for House Liaison in the Navy Office of Legislative Affairs, chief of Training, Doctrine, and Assessment and assistant deputy director for Combating Terrorism (JCS J34), and head of Warfighting Assessments Branch (N812), and executive assistant to the vice chief of naval operations. Promoted to rear admiral in September 2005, his flag assignments include commander, Logistics Group Western Pacific/commander, Task Force 73/commander Navy Region Singapore; director, Assessment Division (N81/N00X) and the director, Quadrennial Defense Review (QDR/N00X). In April 2010 he was promoted to vice admiral and reported for duty as deputy chief of naval operations for Fleet Readiness and Logistics (N4).

HONORABLE SHARON BURKE***ASSISTANT SECRETARY OF DEFENSE FOR OPERATIONAL ENERGY
PLANS & PROGRAMS***

As the Assistant Secretary, Ms. Burke is the principal advisor to the Secretary and Deputy Secretary of Defense on operational energy security and reports to the Under Secretary of Defense for Acquisition, Technology, and Logistics. She is the inaugural Assistant Secretary for the office, which was created to strengthen the energy security of U.S. military operations. The mission of the office is to help the military services and combatant commands improve military capabilities, cut costs, and lower operational and strategic risk through better energy accounting, planning, management, and innovation. Operational energy, or the energy required to train, move, and sustain forces, weapons, and equipment for military operations, accounted for 75 percent of all energy used by the Department of Defense in 2009. Prior to her appointment at the Department of Defense, Ms. Burke was a Vice President and Senior Fellow at the non-partisan and independent Center for a New American Security (CNAS), a defense policy think tank. Ms. Burke has extensive previous U.S. government service.

**DR. RICHARD CARLIN*****DEPARTMENT HEAD, SEA WARFARE AND WEAPONS DEPARTMENT,
OFFICE OF NAVAL RESEARCH***

Dr. Richard T. Carlin became Department Head for the Sea Warfare and Weapons Department at the Office of Naval Research (ONR) in September 2007. As Department Head, Dr. Carlin oversees a broad range of S&T programs for surface ships, submarines, and undersea weapons with an annual budget of approximately \$500M per year. Immediately prior to his current position, he was the Director for the Undersea Weapons and Naval Materials Division with responsibilities in undersea weapons and countermeasures, advanced energetics, structural materials (alloys and composites), materials for power systems, acoustic transducers, maintenance reduction technologies, and blast mitigation materials. During his career at ONR, he also served as the Acting Chief Scientist in 2004 and as Director for the Mechanics and Energy Conversion Division from 2001 to 2005. Prior to his appointment as a Division Director, Dr. Carlin was the ONR Program Officer for Electrochemistry S&T and Undersea Weapons Propulsion with programs covering numerous electrochemical and thermal power technologies. Additionally, Dr. Carlin serves as the Navy S&T representative on various energy advisory groups, including the Hydrogen and Fuel Cell Interagency Task Force, DDR&E Energy Security Task Force, and Naval Task Force Energy.

**COL BOB CHARETTE, USMC*****DIRECTOR, U.S. MARINE CORPS EXPEDITIONARY ENERGY OFFICE***

As the Director, Expeditionary Energy Office (2009-Present) Col Charette is tasked with analyzing, developing and directing the USMC Energy Strategy. Charette was born in Scranton, PA. He enlisted in the Marine Corps Reserves in 1985 and attended boot camp at Parris Island, SC. He then attended Officer Candidate School in Quantico, VA and was commissioned August 1986. He has earned a Bachelors of Science degree in Chemistry from Delaware Valley College (1986), Masters of Business Administration from the University of Phoenix (2002), and a Masters of National Security Strategy from the National War College (2007). Participated directly in the following combat operations; Operation Desert Storm, Kuwait/Iraq (1991), Operation Southern Watch, Iraq (1995), Operation Deliberate Force, Bosnia (1995), Operation Enduring Freedom, Afghanistan (2001-2002), Operation Iraqi Freedom, Iraq (2005). He also participated in three deployments to the Western Pacific, two in support of the Unit Deployment Program (1992 and 1996). In addition, Col Charette has made three deployments afloat, one aboard USS Theodore Roosevelt (CVN-71) with Carrier Air Wing 8 (1995), and two aboard the USS Carl Vinson (CVN-70) with Carrier Air Wing 9 (2003 and 2005).





RADM PHILIP CULLOM

DIRECTOR, OPNAV N45; DIRECTOR, NAVY TASK FORCE ENERGY

Rear Admiral Cullom graduated with distinction from the U.S. Naval Academy with a bachelor's degree in physics. He also holds a master's degree in business administration with distinction from Harvard Business School. At sea, he has served aboard USS Truxtun (CGN 35), USS Jesse L. Brown (FF 1089), USS Dwight D. Eisenhower (CVN 69), and USS Mobile Bay (CG 53), participating in numerous exercises and counter-narcotics patrols as well as Operations Desert Storm and Southern Watch. From 1998 to 1999 he commanded USS Mitscher (DDG 57) during the Kosovo crisis. As commander, Amphibious Squadron Three, he served as sea combat commander for the first Expeditionary Strike Group (ESG 1) in support of Operations Iraqi Freedom and Enduring Freedom (2003-2004). From June 2007 to August 2008, he commanded the Eisenhower and George Washington Strike Groups, as Commander, Carrier Strike Group Eight. Ashore, he has served in various technical, policy, and strategy positions. Joint assignments included Defense resource manager within the J-8 Directorate of the Joint Staff and two positions at the White House as Special Assistant to the Director of the Office of Management and Budget, and Director for Defense Policy/Arms Control at the National Security Council. As a Flag Officer, he has served as Director of Deep Blue, the Strategy and Policy (N5SP) Division, and Fleet Readiness Division (N43). In July 2010, he assumed his present duties as Director, Energy and Environmental Readiness Division on the Navy Staff.

MS. JO DECKER

*ASSISTANT DEPUTY CHIEF OF NAVAL OPERATIONS FOR FLEET
READINESS AND LOGISTICS*



Ms. Decker is currently the senior civilian responsible for policy, program, and resource allocation for world-wide U.S. Navy Readiness and Logistics. Prior to this assignment she was the Special Assistant to the Under Secretary of the Navy. From April 2008 to June 2010 Ms. Decker was the Director of the Office of Program Appraisal. From May 2005 to April 2008 she served as Assistant Deputy Chief of Naval Operations for Integration of Capabilities and Resources (N8). From March 2001 to May 2005 Ms. Decker served as Assistant Chief of Naval Personnel for Military Personnel, Navy (MPN) Financial Management. In that position she was the civilian line executive and Chief Financial Officer/Advisor to the Chief of Naval Personnel (CNP) for all matters relating to the MPN appropriation, as well as Navy's allocation of the Defense Health Appropriations, and Retired Pay Accounts. Ms. Decker has held positions of significant responsibility since early in her civil service career in 1983 including executive positions as Deputy/Acting Comptroller of Naval Air Systems Command, Chief Financial Officer for the Office of Naval Intelligence (ONI) and Director, Assessments and Evaluation, ONI.

RADM WILLIAM FRENCH

COMMANDER, NAVY REGION SOUTHWEST



Rear Admiral French was commissioned through the Naval Reserve Officer Training Corps Program in May 1979. He earned a Master of Science degree from Naval Postgraduate School in 1986 and a Master of Arts from the Naval War College in 1999. A submarine officer and graduate of the Navy's Nuclear Power Training, French has served at sea in USS Spadefish (SSN 668), as operations officer in USS Sea Devil (SSN 664), and engineer in USS Tecumseh (SSBN 628). He served as executive officer of USS Helena (SSN 725) and commanded USS Salt Lake City (SSN 716). Ashore, French served as Submarine Officer Community manager at the Bureau of Naval Personnel; as deputy commander of Submarine Squadron 11; as chief of the Strategy and Policy Division at United States Strategic Command in Omaha, Neb.; as director, Submarine Officer Distribution and Nuclear Propulsion Program manager at the Bureau of Naval Personnel; and commanded Submarine Squadron 3 in Pearl Harbor. During his squadron command tour, all six of the squadron's submarines deployed, five of which conducted operations in direct support of Operation Iraqi Freedom. French's first flag officer assignment was serving as commander, Navy Region Northwest, followed by command of Navy Region Marianas while concurrently serving as U.S. Defense representative to Guam, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia and Republic of Palau. French currently serves as Commander, Navy Region Southwest.

ADM JOHN C. HARVEY, JR. *COMMANDER, U.S. FLEET FORCES COMMAND*

Born and raised in Baltimore, Md., Adm. John C. Harvey was commissioned from the U. S. Naval Academy in 1973 and immediately commenced training in the Navy's Nuclear Propulsion program. Harvey has served at sea aboard USS Enterprise (CVN 65), USS Bainbridge (CGN 25), USS McNerney (FFG 8), as reactor officer aboard USS Nimitz (CVN 68), and as executive officer on USS Long Beach (CGN 9). He commanded USS David R Ray (DD 971), USS Cape St. George (CG 71) and Cruiser-Destroyer Group Eight/Theodore Roosevelt Strike Group. He has deployed to the North and South Atlantic; the Mediterranean, Baltic and Red seas; the Western Pacific, Indian Ocean, and the Persian Gulf. Ashore, he served three tours at the Bureau of Naval Personnel in a variety of billets including surface nuclear officer detailer, CGN/CVN placement officer, surface nuclear program manager in N13, legislative adviser to chief of naval personnel (CNP), executive assistant to CNP and as director, Total Force Programming and Manpower Management Division (OPNAV N12). He has also served as the senior military assistant to the under secretary of defense (Policy), and on the Navy staff as deputy for Warfare Integration (OPNAV N7F). Most recently, he served as the 54th chief of naval personnel/OPNAV N1 and as the director, Navy staff (OPNAV). Harvey assumed command of U.S. Fleet Forces Command in July 2009.



MR. THOMAS W. HICKS *DEPUTY ASSISTANT SECRETARY OF THE NAVY (ENERGY)*

Tom Hicks is the Deputy Assistant Secretary of the Navy for Energy. He serves as the Secretariat focal point on all matters pertaining to the Department of Navy's energy conservation, energy efficiency, energy resources, and green initiatives. Previously, Mr. Hicks held several executive roles at the U.S. Green Building Council (USGBC). Most recently, he spearheaded a new strategic venture on behalf of USGBC - the Building Performance Initiative - to ensure that all green buildings meet or exceed their energy and environmental performance goals. As Vice President of the Leadership in Energy and Environmental Design (LEED) green building rating system, he led the development and implementation of all LEED rating systems. He also served as Vice President for International Programs. Prior to USGBC, he was a Senior Program Manager at the U.S. Environmental Protection Agency within the Energy Star for Buildings program.



MR. JAMES HORNFISCHER *NEW YORK TIMES BESTSELLING AUTHOR*

James D. Hornfischer is the author most recently of the *New York Times* bestseller, *Neptune's Inferno: The U.S. Navy at Guadalcanal*, which the *Wall Street Journal* called "extremely readable, comprehensive and thoroughly researched.. In the end, what one takes away from Mr. Hornfischer's vivid and engaging account is a feeling for the uncertainty, complexity and extreme physical and psychological demands of war at sea in 1942." Hornfischer is also the author of *Ship of Ghosts* and *The Last Stand of the Tin Can Sailors*, winner of the Samuel Eliot Morison Award. When he's not writing, he works as a literary agent, representing nonfiction authors such as H. W. Brands, Ron Powers, Alex Kershaw, and Annie Jacobsen. In his 18 years as a literary agent, he has helped put 16 books on the *New York Times* bestseller list, including three #1s. A native of Massachusetts, he lives in Austin with his wife and their three children.



DR. HENRY KELLY

*ACTING ASSISTANT SECRETARY AND PRINCIPAL DEPUTY
ASSISTANT SECRETARY FOR THE OFFICE OF ENERGY EFFICIENCY
AND RENEWABLE ENERGY, U.S. DEPARTMENT OF DEFENSE*



In his role, Dr. Kelly oversees a broad energy portfolio, helping hasten the transition to a clean energy economy. The EERE portfolio includes critical efforts to drive innovation, including the SunShot Initiative, which aims to reduce the installed cost of utility-scale solar systems to a dollar-a-watt. At a dollar-a-watt, solar energy is cost competitive—without subsidy—with other energy sources. Dr. Kelly also manages programs that will help put one million electric vehicles on the road by 2015, make the nation's buildings 20% more efficient, and help the United States obtain 80% of its electricity from clean energy sources by 2035. Prior to his arrival at DOE, Dr. Kelly served as the President of the Federation of American Scientists where he led a team that conducted analysis and advocacy on science, technology, and public policy, including global security issues, energy policy, and education technology. Dr. Kelly draws on vast experience in a variety of government positions. For seven years he worked in the Clinton White House as the Assistant Director for Technology for the Office of Science and Technology Policy. There he helped negotiate and implement administration research partnerships in energy and the environment, information technology, and learning technology. These partnerships included new automobile and truck technology, housing technology, bioprocessing technology, and information technology.

MR. VINOD KHOSLA

KHOSLA VENTURES



Vinod came to the U.S. to get his master's in biomedical engineering at Carnegie-Mellon University. His start-up dreams attracted him to Silicon Valley, where he got an MBA at Stanford University in 1980. Upon graduation he was one of the three founders of Daisy Systems, which was the first significant computer-aided design system for electrical engineers. Khosla, driven by the frustration of having to design the computer hardware on which the Daisy software needed to be built, started the standards-based Sun Microsystems in 1982 to build workstations for software developers. At Sun he pioneered “open systems” and RISC processors. Vinod has a passion for nascent technologies that can have a beneficial effect and economic impact on society. His greatest passion is being a mentor to entrepreneurs, helping them build technology-based businesses. His current passion is social entrepreneurship, with a special emphasis on microfinance as a poverty alleviation tool. He is a supporter of many microfinance organizations in India and Africa. He has been experimenting with education and global housing. Vinod is also passionate about alternative energy, petroleum independence, and the environment.

RDML MATT KLUNDER

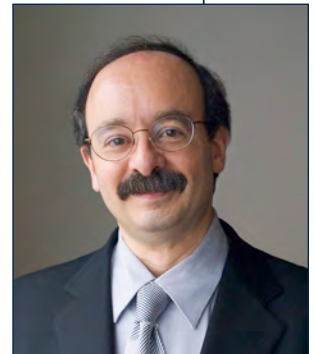
DIRECTOR, OPNAV N2/N6F2



Rear Admiral Klunder graduated from the U.S. Naval Academy in 1982 and earned his wings of gold at Meridian, Miss., in September 1984. Subsequent flying tours were based in NAS Miramar, Calif.; NAS Patuxent River, Md.; Naval Air Facility Atsugi, Japan; and NAS Lemoore, Calif., where he was qualified in numerous aircraft including the E-2C Hawkeye and F/A-18 E/F Super Hornet. Klunder has served at sea in Airborne Early Warning Squadron (VAW) 112, VAW-115 as a department head, VAW-115 as commanding officer, and Carrier Air Wing 2 as air wing commander. He has made eight deployments and multiple surge operations. Klunder's shore tours include serving as a flight instructor, Naval Air Training and Operating Procedures Standardization officer and Commander Naval Air Force, U.S. Pacific Fleet evaluator at VAW-110; test pilot/project officer at Force Warfare Test Directorate; senior operations officer and Single Integrated Operational Plan officer at the Joint Staff J-3/National Military Command Center; as Joint Staff liaison officer and section chief at the U.S. State Department; as Combined Air Operations Center deputy director at Al Udeid Air Base in Qatar; and deputy director for Information, Plans, and Security for OPNAV N3/N5. In July 2010, Klunder reported as director of Intelligence, Surveillance and Reconnaissance Capabilities Division, OPNAV N2/N6F2 following his assignment as the 83rd commandant of midshipmen at the U.S. Naval Academy.

MR. AMORY LOVINS
COFOUNDER, CHAIRMAN & CHIEF SCIENTIST, RMI

Recovering physicist Amory Lovins, Hon. AIA, FRSA, is cofounder, Chairman, and Chief Scientist of Rocky Mountain Institute (www.rmi.org); advisor to major firms and governments worldwide on advanced energy efficiency; author of 31 books and over 450 papers; and recipient of the Blue Planet, Volvo, Zayed, Onassis, Nissan, Shingo, and Mitchell Prizes, MacArthur and Ashoka Fellowships, 11 honorary doctorates, and the Heinz, Lindbergh, Right Livelihood, National Design, and World Technology Awards. A Swedish engineering academician, honorary U.S. architect, and former Oxford don, he has taught at nine universities, most recently Stanford Engineering School (www.rmi.org/stanford). His latest books are *Small Is Profitable* (2009, www.smallisprofitable.org) *Winning the Oil Endgame* (2004, OSD- and ONR-sponsored, www.oilendgame.com), and *Reinventing Fire* (2011, www.reinventingfire.com). In 2009, *Time* named him one of the world's 100 most influential people, and *Foreign Policy*, one of the 100 top global thinkers. His security background spans nonproliferation, critical infrastructure, strategic doctrine, radical platform design, and three decades' leadership in military energy efficiency at the OSD and Service levels, including two DSB panels. He keynoted SECNAV's 07 Jun 11 Current Strategy Forum at NWC.



DR. ARUN MAJUMDAR
DIRECTOR, ADVANCED RESEARCH PROJECTS AGENCY - ENERGY

Dr. Arun Majumdar became the first Director of ARPA-E, the country's only agency devoted to transformational energy research and development, in October 2009. Dr. Majumdar also currently serves as Senior Advisor to the Secretary. Prior to joining ARPA-E, Dr. Majumdar was the Associate Laboratory Director for Energy and Environment at Lawrence Berkeley National Laboratory and a Professor of Mechanical Engineering and Materials Science and Engineering at the University of California, Berkeley. His highly distinguished research career includes the science and engineering of energy conversion, transport, and storage ranging from molecular and nanoscale level to large energy systems. In 2005, Dr. Majumdar was elected a member of the National Academy of Engineering for this pioneering work. At Berkeley Labs and UC Berkeley, Dr. Majumdar helped shape several strategic initiatives in the areas of energy efficiency, renewable energy, and energy storage. He also testified before Congress on how to reduce energy consumption in buildings. Dr. Majumdar has also served on the advisory committee of the National Science Foundation's engineering directorate, was a member of the advisory council to the materials sciences and engineering division of the Department of Energy's Basic Energy Sciences, and was an advisor on nanotechnology to the President's Council of Advisors on Science and Technology.



DR. TIMOTHY MCCOY
DIRECTOR, ELECTRIC SHIP OFFICE

Dr. Timothy J. McCoy serves as Director of the Electric Ship's Office (PMS-320) within the Program Executive Office for Ships in Washington, DC. There, he is responsible for developing electric power and propulsion systems for the US Navy's fleet. Prior to entering government service, he worked in industry as R&D Director and President of a defense contractor. Previously, he served on active duty in the US Navy. Dr. McCoy's experience includes development of integrated electric power and propulsion systems, shipboard control systems and design and construction for several classes of ships including AOE-6, DDG-51, DDG-1000 and LPD-17. Dr. McCoy holds a BSME from the University of Illinois, a Naval Engineer's Degree, SMEE and PhD from MIT and has taught ship design and systems engineering while on the MIT faculty. He is a registered Professional Engineer, is a member of ASNE, IMarEST, SNAME and a senior member of the IEEE. He has published over 35 technical papers and is an Adjunct Professor in the Electrical and Computer Engineering Department at Carnegie Mellon University.



MS. KAREN MILLS

ADMINISTRATOR, SMALL BUSINESS ADMINISTRATION



Karen Mills was sworn in April 6, 2009, as the 23rd Administrator of the U.S. Small Business Administration after being appointed by President Barack Obama and unanimously confirmed by the U.S. Senate. She leads a team of 3,000 employees whose mission is to help entrepreneurs and small business owners grow and create jobs by providing greater access to capital, counseling, federal contracting opportunities, disaster assistance and more. Among its priorities, the SBA manages a portfolio of more than \$90 billion in loan guarantees. Each year, the agency helps leverage nearly \$100 billion in federal contracts to small businesses and supports free counseling and technical assistance to more than 1 million entrepreneurs. In addition, SBA provides disaster assistance to homeowners, renters, and businesses with the help of 2,000 additional on-call employees. Throughout her career, Mills has owned, managed, mentored, and invested in small and growing businesses across the country. She earned an A.B. in economics from Harvard University and an M.B.A. from Harvard Business School where she was a Baker Scholar. Additionally, she served as a member of the Council on Foreign Relations.

RDML ANN PHILLIPS

DIRECTOR, SURFACE WARFARE DIVISION (OPNAV N86)



Rear Admiral Phillips, Director of Navy Surface Warfare Division, is responsible for requirements and resources for building the Navy's surface fleet of tomorrow. She graduated from the University of North Carolina at Chapel Hill, and received her commission in 1983 through the Naval Reserve Officers Training Corps. At sea, Rear Admiral Phillips served in aircraft carriers, destroyers, destroyer tenders, and repair tenders. She served as the first commanding officer of USS Mustin (DDG 89). She commanded Destroyer Squadron 28, in Norfolk, Va. She was the Flag Secretary to Cruiser-Destroyer Group 3 deploying with Carl Vinson Task Group, supporting Operation Desert Strike. She served as the executive officer on board USS Kinkaid (DD 965). Rear Admiral Phillips was the EA to Commander 6th Fleet/commander, Joint Command Lisbon in Lisbon, Portugal. She served on the staff of the Chief of Naval Operations, as an action officer in the Surface Warfare Division – DD 21 Program. She also served on the Chief of Naval Operations Strategic Studies Group, SSG XXVIII as a fellow from October 2008 to July 2009.

MR. JOHN H. QUIRK V

PROFESSIONAL STAFF MEMBER, SENATE ARMED SERVICES COMMITTEE



Prior to joining the staff of the Committee on Armed Services in January 2006, John served as a Captain in the U.S. Army with assignments to Fort Leonard Wood, Fort Lewis, and Schofield Barracks. John deployed in support of Operation Iraqi Freedom from 2004-2005 with the 84th Engineer Combat Battalion (Heavy) which operated as a theater-wide asset throughout Iraq. While deployed he served as an Executive Officer and Battalion Staff officer with responsibilities for unit readiness, training, budget, construction, and movement. Prior to deployment John served as a Platoon Leader executing military construction missions within the U.S. Army Pacific area of operations. John holds a Bachelor's of Science from Loyola University Maryland and is a graduate of the U.S. Army Engineer School at Fort Leonard Wood, Missouri. John is also contributing writer for the Mensa Research Journal.

MAJ SEAN SADLIER, USMC *U.S. MARINE CORPS EXPEDITIONARY ENERGY OFFICE*

On December 2, 1994, Maj Sadlier received a commission in the United States Marine Corps. In March 2002, Maj Sadlier received a Master of Science degree in Information Technology Management. From April 2002 until April 2005, Maj Sadlier served as the Information Management Officer at the Marine Air Ground Task Force Staff Training Program, Quantico. Maj Sadlier served as the Operations Officer for Combat Logistics Battalion 31 until September 2005. After returning to Camp Lejeune, Maj Sadlier began serving as the Executive Officer for Marine Expeditionary Unit Service Support Group 24. He was assigned to 2d Maintenance Battalion as the Officer in Charge of the Remain Behind Element from January to August 2007. Reinforced until March 2008. During May 2008, Maj Sadlier executed orders to Deputy Commandant Installations and Logistics (LPO) as the Assistant Operations Officer until March 2010 when he assumed duties as a Logistics Analyst, Expeditionary Energy Office; he is currently serving in the same billet and deployed for 10 months to Regional Command (Southwest) as the E2O LNO in support of expeditionary energy initiatives.



MR. JIM THOMSEN *PRINCIPAL CIVILIAN DEPUTY, ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, DEVELOPMENT & ACQUISITION)*

Mr. Thomsen currently serves as the Principal Civilian Deputy, Assistant Secretary of the Navy for Research, Development & Acquisition. As the Principal Civilian Deputy to the Honorable Sean Stackley, Mr. Thomsen's responsibilities include oversight and policy support for all Navy and Marine Corps research, development and acquisition programs for Shipbuilding, Aviation, Space, and Weapons systems. This responsibility includes more than \$100B annually and hundreds of technical development and procurement programs for the Department of Navy. Concurrently in his position as Principal Deputy, Mr. Thomsen is serving a special assignment to the Under Secretary of Defense for Acquisition, Technology & Logistics. Since July 2010, Mr. Thomsen has served as co-executive director for the Under Secretary's Better Buying Power initiative for Defense Acquisition. Prior to his current position, Mr. Thomsen served as the Program Executive Officer (PEO) for Littoral and Mine Warfare, as well as Executive Director of the same organization. As the PEO, Mr. Thomsen was responsible for the execution of more than \$3B annually on technical programs that included Counter-IED Electronic Warfare Systems in response to Operation Iraqi Freedom and Operation Enduring Freedom; Mission Modules for the Littoral Combat Ship; Mine Warfare Systems; Special Warfare Operations Systems; Anti-Terrorism Naval Ship Systems; and all Naval Undersea Surveillance Systems. Mr. Thomsen has held several technical and management positions within the Navy's Engineering Commands.



HONORABLE TOM VILSACK *SECRETARY OF AGRICULTURE*

Tom Vilsack was appointed by President Barack Obama as the 30th Secretary of the U.S. Department of Agriculture (USDA) and sworn into office on January 21, 2009. As Secretary of Agriculture, Vilsack is working hard to strengthen the American agricultural economy, to revitalize rural communities, to protect and conserve our natural resources, and to provide a safe, sufficient and nutritious food supply for the American people. Because USDA's work affects every American everyday, we are proud to be the 'Every Way, Every Day' USDA. As Agriculture Secretary, Vilsack has worked to implement President Obama's ambitious agenda to turn around the economy and put Americans back to work. USDA has supported struggling farmers and ranchers, provided food aid to 1 in 4 Americans, and worked to create jobs and build a foundation for future economic growth. At USDA, Secretary Vilsack is working to ensure that America's forests and private working lands are conserved, implementing new strategies to restore our forests and clean our water supply. These efforts are already creating private sector jobs protecting and rehabilitating our forests and wetlands. Under Vilsack's leadership, USDA is working to improve the health of America's children, targeting child hunger and obesity with efforts to encourage balanced meals, nutritious eating and increased physical activity. He has ordered a top to bottom review of USDA's food safety standards and has begun to implement policy changes to ensure the safety of the American food supply.





FORMER SENATOR JOHN WARNER

During his 30 years in the Senate, John Warner served on the Senate Armed Services Committee, including three periods as Chairman, and was viewed as one of the most influential senators on military and foreign policy issues. Most recently, he was the lead co-sponsor with Senator Joseph Lieberman (I-Conn.) on climate change legislation. The Senator volunteered for two periods of active military duty: the first as an enlisted sailor in the final years of World War II (1945-46), and the second as a Lieutenant in the U.S. Marines during the Korean War (1950-52). After completing his law degree at the University of Virginia School of Law, he clerked for The Honorable E. Barrett Prettyman, U.S. Court of Appeals for the District of Columbia Circuit. From 1955 to 1960, the Senator was an Assistant U.S. Attorney for the District of Columbia. He was appointed, and confirmed by the Senate, as Under Secretary, and later as Secretary, of the U.S. Navy, positions he served in for a total of more than five years during the Vietnam War. He won election to his first of five Senate terms in November 1978. On January 3, 2009, he completed his fifth consecutive term and retired, establishing a record of being the second longest-serving U.S. Senator in the history of the Commonwealth of Virginia.



MCPON (SS/SW) RICK D. WEST *MASTER CHIEF PETTY OFFICER OF THE NAVY*

Master Chief Petty Officer of the Navy Rick D. West graduated from Northwest Georgia High School in 1981 and immediately entered the U.S. Navy. West received recruit training and Quartermaster training at Orlando, Fla., followed by Enlisted Submarine School at Groton, Conn. His first duty assignment was aboard USS Ethan Allen (SSN 608) where he completed submarine qualifications. Other assignments include USS Thomas Edison (SSN 610), USS Sea Devil (SSN 664), Commander Naval Activities United Kingdom, USS Tecumseh (SSBN 628)(Blue), and Commander, Submarine Force, U.S. Pacific Fleet Staff (TRE Team). West was then assigned as Chief of the Boat aboard the San Diego-based fast-attack submarine, USS Portsmouth (SSN 707), where he completed two Western Pacific deployments and the crew earned two Battle Efficiency "E" awards. Upon completion of a CMC tour at Submarine Squadron ELEVEN, he was selected as COMSUBPAC Force Master Chief from January 2001 to 2004. During this time, West also attended the Senior Enlisted Academy in Newport, R.I. West then reported as the CMC to USS Preble (DDG 88), where he deployed to the Persian Gulf and qualified as an Enlisted Surface Warfare Specialist. West was selected during his tour on the Preble to serve as the Pacific Fleet Fleet Master Chief from February 2005 to June 2007. He then served as the 14th Fleet Master Chief for Commander, U.S. Fleet Forces Command from June 2007 to December 2008. West became the 12th Master Chief Petty Officer of the Navy on Dec. 12, 2008.

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THANK YOU TO OUR SPONSORS!



Boeing Energy is increasing the efficiency and security of local, regional and national energy systems. Applying advanced technologies to improve the environmental footprint and energy needs of military installations and government buildings and structures, Boeing Energy provides solutions for military installations implementing “net zero” and other energy security programs in accordance with U.S. Department of Defense energy mandates.

Boeing Energy is collaborating with Siemens to jointly develop smart, secure microgrid management solutions that will help the DOD lower operational costs while increasing energy efficiency.

Secure microgrid management solutions would lower operational costs, provide energy security, and increase reliability by addressing both the supply and demand side of the energy equation. The integration of energy efficiency, distributed and renewable generation, and legacy utility and third-party applications into a highly optimized control system would provide the tools necessary to help the DOD achieve its energy security and sustainability goals.

Employing advanced levels of cyber security, interoperability, scalability and system openness for the microgrid of the future, Boeing Energy is also developing solutions for commercial utility customers that understand and are concerned about non-traditional threats to the integrity of their electrical grid. Boeing Energy’s military-grade cybersecurity, technologies and methods defend the electrical grid from hostile attack, hack, or other potential operational shocks.

Boeing Energy is working on a number of projects to make a real difference in how the Department of Defense accesses and uses energy. Boeing Energy has been awarded several U.S. Department of Energy grants emphasizing development of US-based smart grid technologies and systems.

In addition to grant project work, Boeing Energy has also teamed with KEMA, a global authority in strategic and technical energy consulting, to collaborate on the development of smart grid technologies and other opportunities related to secure, reliable and sustainable energy infrastructure.

Boeing also is a leading member of the Renewable and Sustainable Energy Institute (RASEI), which is an interdisciplinary joint research effort between the University of Colorado at Boulder and the U.S. Department of Energy’s National Renewable Energy Laboratory (NREL). Boeing is leading the institute’s efforts to develop solutions for creating a national smart grid that modernizes energy distribution and use.

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SIEMENS

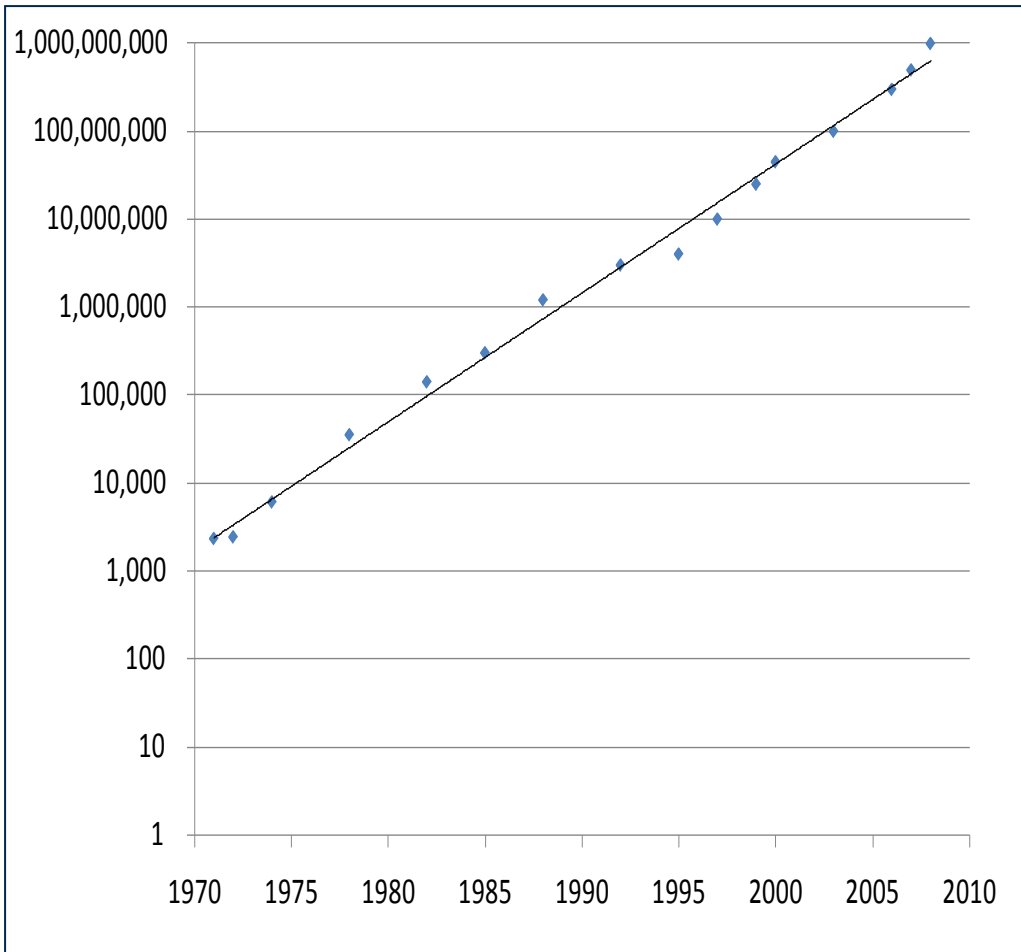
Past is Prologue



“Fossil fuels resemble capital in the bank. A prudent and responsible parent will use his capital sparingly in order to pass on to his children as much as possible of his inheritance. A selfish and irresponsible parent will squander it in riotous living and care not one whit how his offspring will fare.” 14 May 1957 — **Admiral Hyman Rickover, Naval Reactors**

Moore's Law, and Energy

Transistor Count



- Observation (1965):
Number of transistors on integrated circuit doubles every two years
- Enhanced capability typically increases the demand for energy
- Advances in technology can be steady and almost inexorable

The Navy must find a way to keep the march of technology and improved efficiencies from just requiring more energy.







2011 NAVAL ENERGY FORUM

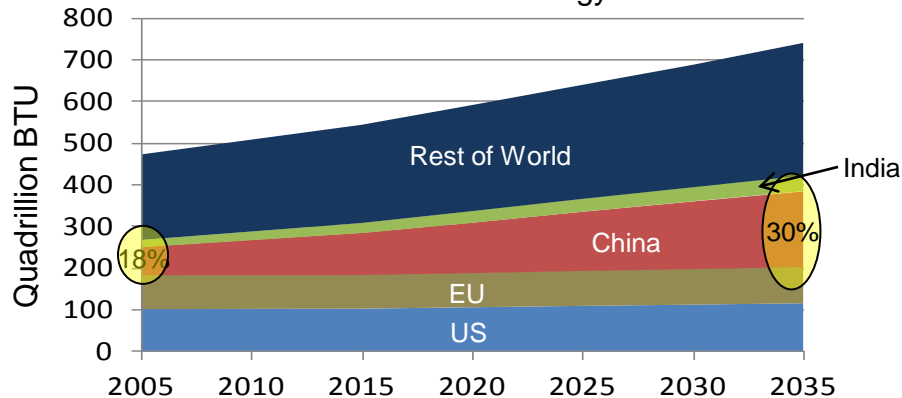


CREATING SPARTAN ENERGY WARRIORS

Is It Different Now?

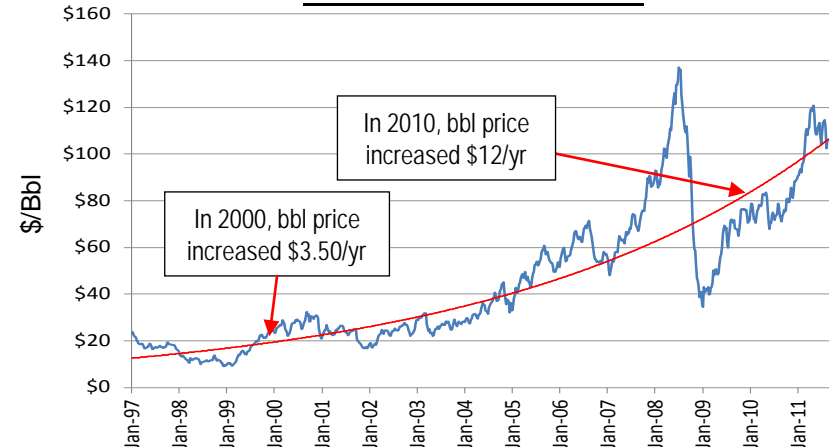
Global Forces

Demand for Worldwide Energy 2005-2035



'Chindia' is rapidly becoming global energy driver

Market Forces



Increased price volatility and upward trend

Military Reality

	Fuel Cost / Operating Expense		Fuel Change (Volume)	Fuel Cost Growth
	2000	2010		
American Airlines	14%	26%	-19%	142%
Delta	14%	30%	-24%	139%
United	13%	30%	-10%	166%
Total	14%	29%	-19%	148%
Navy	1.25%	2.65%	-11%	291%

Even organizations driven only by efficiency are losing ground

Other Pressures

- Fukushima - Nuclear concerns anew
- Deepwater Horizon - Potential restrictions
- San Diego Power Outage
- Hurricane Irene and VA earthquake
- Rare Earth Elements - Economic Weapon



Energy shocks and policies further impact our plan

2011:

Bomb blast destroys
NATO tankers in
Pakistan

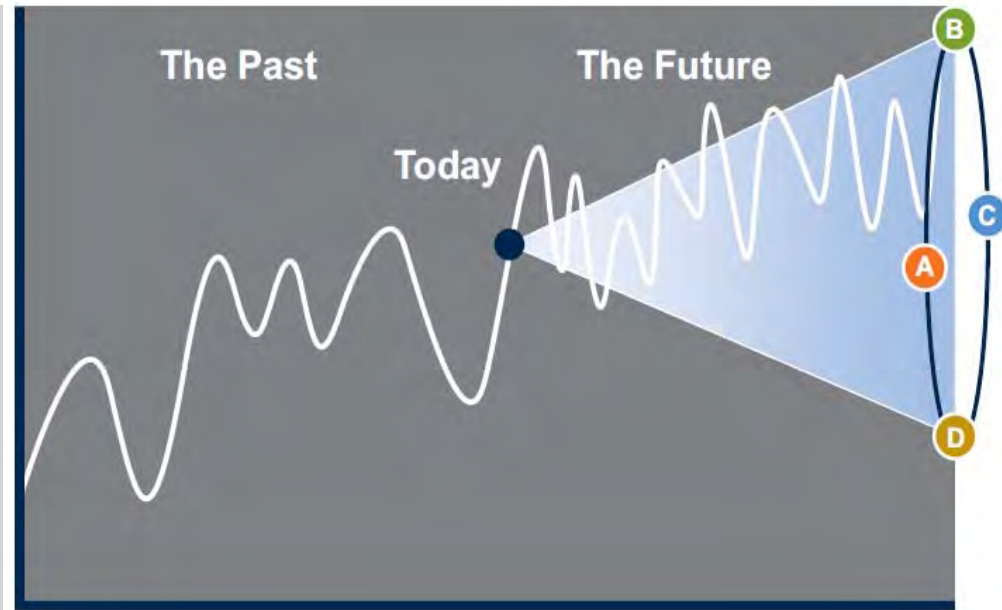






"Fuel supply lines are the umbilical cord and lifeline of the crusader community...focus operations on oil...since this will cause them to die off."
-- Osama bin Laden

4 Energy Future Alternatives for 2030

ALTERNATIVE FUTURES:

- Bound the realm of future possibilities
- Are shaped by multiple types of forces
- Draw attention to possibilities we may otherwise not have taken seriously
- Create “memories of the future,” allowing us to recognize “weak signals” as the future unfolds



Alternative A	Alternative B	Alternative C	Alternative D
			
A “replacing oil as transportation fuel” world	An “alternative energy” world	An “energy resource crisis” world	A “fossil based green” world

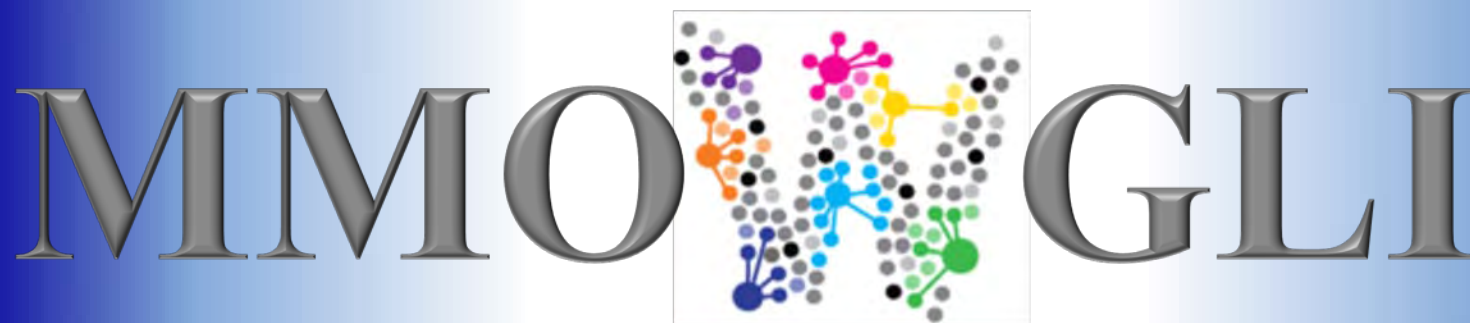
Retooling the Existing Fleet



“Put simplistically, the Navy has decided that we need to be efficient with the energy that we have and that we need to find alternative fuels and sources of energy.”

We are trying to use our fuel judiciously.” — Admiral Jonathan Greenert, CNO

Coming in 2012

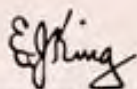


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MAN YOUR STATIONS!

"The Navy must
have 16 million
gallons of fuel a
day to carry the
fight to the enemy"



COMMANDER IN CHIEF OF THE U.S. FLEET
CHIEF OF NAVAL OPERATIONS



Stick to your job -
OIL IS AMMUNITION

TV
PG

MADE
EVERY
DAY
HISTORY

A New Energy Ethos



Culture & Behavior
Changes

Energy Efficient
Acquisition

Existing Fleet Efficiencies

Diversifying Energy
Resources

Energy
Smart
Navy

Energy
Smart
Nation

Being “energy smart” – requires a Spartan mindset to sustain the mission... in perpetuity.